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THE EFFECT OF OWNERSHIP STRUCTURE ON VOLUNTARY DISCLOSURE OF INTELLECTUAL CAPITAL INFORMATION: THE CASE OF CANADIAN FIRMS

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ABSTRACT

Purpose: The purpose of the study is to examine the effect of ownership structure on voluntary disclosure of information on intellectual capital.

Design/methodology/approach: We use a sample of 50 Canadian companies listed on the Toronto Stock Exchange for 2012. The extent of disclosure is measured by the index of Li *et al.*, (2008).

Findings: We concluded that there is a negative and statistically significant relationship between the level of disclosure of intellectual capital and ownership concentration. There is also a positive and statistically significant relationship between the level of disclosure of intellectual capital and institutional ownership. However, the regression results show no relationship between the level of disclosure of intellectual capital and managerial ownership.

Originality/value: To our knowledge, this is the first study to investigate the effect of concentration of ownership and the identity of shareholders on voluntary disclosure on intellectual capital disclosure in Canada. Companies are highly concentrated and are characterized by an active intellectual capital information market. The motivation of shareholders to disclose information on intellectual capital may be different compared to other developed countries such as the United States where ownership is much dispersed.

Limitations/ implications: The principal limit is the use of a manual measure of disclosure for a reduced number of firms. Using a larger sample and an electronic method to measure the disclosure will be recommended in future research. Our results are interpreted in the light of the increasing importance of the effect of corporate governance on disclosing information on intellectual capital and constitute a contribution to the ongoing debate on corporate reporting practices in Canada.

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INTRODUCTION

In today's knowledge-based economies, the issue of intellectual capital (IC) is increasingly becoming a topic of interest. It is becoming an increasingly popular subject for research by both academics and practitioners (Petty and Guthrie, 2000). It has also attracted increasing government interest and funding (OECD, 1999). In fact, studies consistently find significant gaps between the firm's market and the book value proving the statements' inadequacy (Chaminade and Roberts, 2003).

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So, there is increasing evidence that the drivers of value creation in modern competitive environments lie in a firm's intellectual capital rather than in physical and financial capital. Keenan and Aggestam (2001) argued that the success of many 21st century organizations lies in their ability to unlock and exploit their intellectual capital to obtain organizational advantage. The study of the information communication strategy on intellectual capital represents, however, a particular interest as long as its content is not regulated and the company has the discretion to decide on its content, which allows taking into account the voluntary and strategic aspect of the disclosure of intellectual capital. In this context, some companies opt for a voluntary disclosure of information of their intellectual capital so as: (1) to supply the market with sufficient information allowing a better decision making. (2) to

contribute to the improvement of markets' financial efficiency via reducing the asymmetry of information, (3) to estimate subjective or unsubstantiated benefits, unrealistic valuations and unjustified volatility of stock prices (OECD, 2008). Nevertheless, despite the benefits of voluntary disclosure of intellectual capital, managers may show reluctance to do so as they consider that disclosure could reveal strategic information to competitors and private information for shareholders. To delineate the powers of managers and influence their decisions, especially in terms of voluntary disclosure of intellectual capital, governance mechanisms are set at the enterprise level, namely ownership structure (Li *et al.*, 2008). The ownership structure indicates the owners of the company's capital and informs about their needs for information disclosed by the company to facilitate decision-making. It has as characteristics: the concentration of ownership, managerial ownership and ownership of institutional investors. The empirical studies in relation to the conceptual link between corporate governance and intellectual capital are limited. To our knowledge this is the first study to investigate the effect of the identity of shareholders on voluntary disclosure on intellectual capital disclosure in Canada. It aims to contribute to the field of research on intellectual capital disclosure (Cerbioni and Parbonetti 2007; Pike and Haniffa, 2008; Muttakin *et al.*, 2015), by examining the relationship between ownership structure attributes and the extent of intellectual capital disclosure for a sample of 50 Canadian companies listed on the Toronto Stock Exchange. The study year is 2012. This paper is organized as follows: after the introduction, we present a review of previous studies and hypotheses in the second section. The third section describes the research methodology. In the fourth section we provide and discuss the results. Finally, we conclude and present the limits of our research and its implications.

Literature review

Definitions of Intellectual Capital

There is a great variety of definitions for IC. Edvinsson and Malone (1997) refer to a firm's market value exceeding its book value and define this difference as IC. Roos and Roos (1997) define IC as the 'hidden assets' not captured in the balance sheet. The OECD (1999) describes IC as the economic value of two categories of intangible assets of a company comprising organizational ('structural') capital (SC) and human capital (HC). By referring to Oliveira *et al.*, (2010), we conceive IC as the value-creating combination of a company's human capital (skills, experience, competence and innovation ability of personnel), structural capital (organizational processes and systems, software and databases and business processes), and relational capital (all resources linked to the external relationships of the firm with stakeholders, such as customers, creditors, investors, suppliers, etc.). Therefore, the intellectual capital is defined as a multi-dimensional concept of human capital, structural capital and relational capital of the company. It represents a value creation factor and a source of competitive advantage. It can be concluded that the concept of intellectual capital, which is resource and knowledge-based companies in the form of intangible assets, if used optimally, enables the company to implement its strategy effectively and efficiently. So, it can be used as an added value for the firm in the form of the company's competitive advantage (Bemby *et al.*, 2015).

The motivation to disclose intellectual capital disclosure in annual reports

Firms are currently not required by accounting standards or by law to report on most of their intellectual capital; however, they may voluntarily elect to disclose such information. Hence, the disclosure of information on intellectual capital falls within the scope of voluntary offer of financial and accounting information. There are a number of incentives that may urge firms that have chosen to voluntarily disclose intellectual capital. In general, the company can provide the best overview over the management of intellectual capital. It is suggested that reporting on intellectual capital may attempt to resolve uncertainty about the firm, thereby improving the stock price (Edvinsson and Malone, 1997) and leading to a reduction in volatility of stock prices, a decrease in firm cost of capital, and an increase in intrinsic value (Canibano *et al.*, 2002). By measuring and disclosing IC, firms provide investors *et al* interested third parties with relevant value information. Credibility is improved and investor relations are ameliorated (Vergauwen and van Alem, 2005). Corporate efforts promoting innovation and sustainable competitiveness (Cohen and Kaimenakis 2007, Wu *et al.*, 2008) are indicated. Vafaei *et al.* (2011) presume that divergence between market and book value dwindles and information asymmetry diminishes. Finally, Bemby *et al.*, (2015) assume that optimal management of intellectual capital can increase the company's market value as investors tend to give higher price shares.

Several theories might also explain why companies choose to report voluntarily on their intellectual capital information. From the perspective of Agency Theory (Jensen and Meckling 1976), voluntary disclosure is explained by the reduction of agency costs resulting from conflicts of interest between shareholders and managers, on the one hand, and shareholders and creditors, on the other. Signal Theory (Spence 1973), explains voluntary disclosure in the assumption of the existence of information asymmetry between managers and investors. It stipulates that leaders who voluntarily disclose information to the market seek to report the future capabilities of the company to create wealth as well as good management of the leading team. The Theory of Resources (Pfeffer and Salancik (1978) focuses on the important role of intellectual capital in the creation of value and the eminence of human resources value, especially those who have knowledge of high technology and creative ability. The theory addresses the resources of the company and how the company can manage and utilize its resources (Randa and Ariyanto, 2012). According to Solikhah (2010) and Bemby *et al.* (2015), resource theory is an approach which states that the company will further excel in competition and get a good financial performance in the way it is owned, controlled and how the managers utilize strategic assets. To achieve transparency and control, these theories provide a framework combining the voluntary publication of decisions to the ownership structure, as an internal mechanism of corporate governance.

Development of hypothesis

Ownership concentration

Prior empirical research on the association between voluntary corporate disclosures and ownership concentration has reported mixed results. Most of these studies have found an inverse relationship between ownership concentration and

voluntary disclosure. In a European context, Oliveira *et al.*, (2006) and Li *et al.*, (2008) have shown that the more the capital is concentrated, the less Portuguese and British firms disclose information about intellectual capital. Therefore, voluntary disclosure of information related to intellectual capital can be more extensive in companies with diffuse capital so that shareholders find out that their interests are preserved and that leaders will make optimal use of their capital. Through a sample of companies listed on the Singapore Stock Exchange, Firer and Williams (2005) confirm that diffuse capital enterprises disclose more information than concentrated capital enterprises. Within the British context and in the French context respectively, Li *et al.*, (2008) and Bougacha and Khoufi (2010) reached the same conclusion.

Their result confirms the assumptions of agency theory.

Hence the first hypothesis:

H1: *Ownership concentration affects negatively the voluntary disclosure of information on intellectual capital.*

Managerial ownership

According to agency theory, agency costs caused by the conflict of interest between managers and agents can be reduced by increasing managerial ownership in the company. The company will prosper if managers have a share in it, because their personal interests will also be fulfilled (Purwanto, 2011). In this regard, Gul *et al.*, (2004), in Hong Kong, and Trabelsi *et al.*, (2005), in France, show that the low participation of managers in the company's capital widens the gap between the interests of shareholders and the interests of managers. Faced with this situation, managers are encouraged firstly to improve the quality of disclosure so as to prevent shareholders from establishing a monitoring mechanism and secondly to protect their reputation and their jobs. However, when managers hold a significant portion of the company's shares, they will take the power to make decisions in order to preserve privileged information (Chau and Gray 2000 in Hong-Kong). However, in the Singapore context, Firer and Williams (2005) found a negative relationship between the percentage of capital held by managers and voluntary disclosure of intellectual capital. The study of Dong and Gou (2010) confirms the nonlinear relationship between managerial ownership and the disclosure of information on intellectual capital and expenses on research and development, in particular. By referring to these results, we can predict a positive relationship between managerial ownership and the disclosure of intellectual capital. Hence our second hypothesis:

H2: *Managerial ownership positively affects the voluntary disclosure of information on intellectual capital.*

CEO duality

As stated above, the CEO duality refers to situations in which an individual is both the CEO and chairperson of board. Jensen and Meckling (1976) support the accumulation of functions between the CEO and the Chairman. According to them, the separation of roles is not crucial since many companies are well managed with combined roles (Boujenoui and Zeghal, 2006). Thus, the accumulation of two roles in the hands of the same person can have a positive impact on disclosure.

Agency theory suggests that combining the two roles enables the CEO to engage in opportunistic behavior because of dominance of the board (Barako *et al.*, 2006). Boujenoui and Zeghal (2006) denounce this duality by considering it as a source of abuse of power. Managers can, in this case, abstain from voluntarily disclosure of information on intellectual capital. CEO duality may constrain board independence and reduce the ability of boards to implement their oversight and governance. Cerbioni and Parbonetti (2007) and Muttakin *et al.*, (2015) reported that concentration of power through CEO duality is negatively associated with IC disclosures, whereas Li *et al.*, (2008) and Hidalgo *et al.*, (2011) found no such relationship. We suggest a negative relationship between the duality of functions and voluntary disclosure of information on intellectual capital:

H3: *There is a negative relationship between the duality of functions of CEO and Chairman and voluntary disclosure of intellectual capital.*

Institutional ownership

According to the agency theory, institutional ownership can serve as an effective control element of the firm. In this context, institutional investors require increasingly a better information disclosure to reduce interest conflicts between majority shareholders and minority shareholders. There is a paucity of empirical studies that associate ownership of institutional investors to disclosure of intellectual capital. In the French context, Bougacha and Khoufi (2010) argue that there is a positive relationship between institutional ownership and voluntary disclosure of intellectual capital. Moreover, Satta *et al.* (2015) found that institutional investors' ownership is not related to disclosure quality. Iaad *et al.*, (2014) suggest no insignificant relation between voluntary disclosure and institutional investors in Jordan. Based on their results, we can predict a positive relationship between institutional ownership and voluntary disclosure of intellectual capital. Hence, our fourth hypothesis:

H4: *Institutional ownership positively affects the voluntary disclosure of information on intellectual capital.*

Control variables

Several empirical studies have examined other variables affecting the volume of voluntary information on intellectual capital such as the level of debt, the company size and the industry.

The size of the firm

The company size is a variable that has often been tested. According to Jensen and Meckling (1976), the agency costs increase with size. Several previous studies have found that firm size influences voluntary disclosure (Bozzolan *et al.*, 2003; Oliveira *et al.*, 2006; Cerbioni and Parbonetti, 2007; Lopes and Rodrigues, 2007; Hidalgo *et al.*, 2011 and Muttakin *et al.* 2015). Larger firms have a complex nexus and there is a conflict between the managers and shareholders, thus increasing agency costs. In order to mitigate these costs, these companies will disclose more voluntary information including information on intellectual capital. Nonetheless, Bougacha and Khoufi (2010) found that company size is not significantly

related to the disclosure of information on intellectual capital. We assume that:

H6: *The size of the company positively influences voluntary disclosure of information on intellectual capital.*

The level of debt

Debt and recourse to external financing becomes a source of conflict that generates agency costs in a contractual relationship opposing creditors to shareholders. Firer and Williams (2003) found that debt is not an explanatory factor of the offer within Singaporean firms. However, in the context of large companies in emerging markets, Kang and Gray (2011) confirmed a negative relationship between debt and the level of voluntary disclosure on intangibles. Muttakin et al., (2015) found a non significant relationship between debt and voluntary disclosure of IC in Bangladesh. Given these results, we propose to test the following hypothesis:

H7: *The debt negatively affects voluntary disclosure of information on intellectual capital.*

Industry

The literature review shows that the industry has a significant impact on voluntary disclosure since companies in the same sector are subject to the same environment and therefore to the same pressures forcing them to communicate (Cooke 1992, Raffournier 1995). Bozzolan et al. (2003, 2006), Williams (2001), Oliveira et al., (2006), Petty and Cuganesan (2005), Woodcock and Whiting (2009), Kang and Gray (2011), Bhatia and Agarwal (2015) found that firms belonging to a high-tech industry are more likely to voluntarily disclose information on intangibles because increased information can help to reduce investors’ uncertainty and thereby ensure that the company in question does not have to pay a high premium due to investors’ perceived information risk. Intellectual capital is considered to be especially important for the high tech (Bukh et al., 2005) biotechnology (Cordazzo and Vergauwen, 2012) and services sectors; it is anticipated that these shall disclose more than the manufacturing companies (Bhatia and Agarwal, 2015). Hence, the following hypothesis:

H8: *Firms belonging to a high technology sector publish more information on intellectual capital than others.*

MATERIALS AND METHODS

Sample

Our sample covers 50 Canadian companies listed on the Toronto Stock Exchange (Table 1) and collected from the 2012Sedar database. The information was drawn from the annual reports and information circulars in the same year.

Table 1. Final sample

Industries	Number of companies	Percentages
Manufacturing	8	16%
Telecommunication	14	28%
Computer software and services	7	14%
Oil, gas and metals	2	4%
Transport and environment	5	10%
Distribution and consumer goods	6	12%
Pharmacy, Biotechnology	8	16%
Total	50	100%

Measurement of variables

Measurement for intellectual capital disclosure (dependent variable)

This variable is measured by a disclosure index. This is a technique used in a multitude of studies on disclosure of intellectual capital (Williams 2001, Bergamini and Zambon 2002; Bontis 2003; Firer and Williams 2005, and Li et al., 2008). In this study, we chose the index of disclosure of intellectual capital used by Li et al. (2008). The choice of this index is based on the fact that, compared to previous studies (Guthrie and Petty, 2000; Bozzolan et al., 2003, and Cerbioni Parbonetti, 2007, etc.), these authors developed a more detailed list on information relating to intellectual capital. The list of information of our study consists of 61 pieces of information divided into three categories (Appendix 1): human capital (CH), structural capital (SC) and relational capital (RC). The index of intellectual capital disclosure ID_j for each company is calculated based on the formula of disclosure index used by Li et al. (2008) as follows:

$$ID_j = \frac{\sum X_{ij}}{n_j}$$

with:

- n_j = number of information to jth firm,
- n_j = 61 for IDTCI: Total Disclosure Index of intellectual capital;
- n_j = 18 for IDCS: the structural capital Disclosure Index;
- n_j = 21 for the IDCR: relational capital Disclosure Index;
- n_j = 22 for IDCH: Human Capital Disclosure Index

Measurement for independent variables

The variables studied will be displayed in the following table (Table 2). The variables related to the ownership structure were collected from the information circular while the control variables were collected from annual reports.

Empirical Models: We have basically 4 models. The first model examines the effect of ownership structure and other control variables on disclosure of intellectual capital (global index).

Global model (M 1)

$$DIS CI = \alpha + \beta_1 K-CONC + \beta_2 K-MANG + \beta_3 ACCUMUL + \beta_4 K-INST + \beta_5 SIZE + \beta_6 DEBTS + \beta_7 INDU + \epsilon_i$$

The other three models study the effect of ownership structure and other control variables on the following components of intellectual capital: human capital, structural capital and relational capital.

Model 2 (M2)

$$DIS HC = \alpha + \beta_1 K-CONC + \beta_2 K-MANG + \beta_3 ACCUMUL + \beta_4 K-INST + \beta_5 SIZE + \beta_6 DEBTS + \beta_7 INDU + \epsilon_i$$

Model 3 (M3)

$$DIS RC = \alpha + \beta_1 K-CONC + \beta_2 K-MANG + \beta_3 ACCUMUL + \beta_4 K-INST + \beta_5 SIZE + \beta_6 DEBTS + \beta_7 INDU + \epsilon_i$$

Model 4 (M4)

$$DIS SC = \alpha + \beta_1 K-CONC + \beta_2 K-MANG + \beta_3 ACCUMUL + \beta_4 K-INST + \beta_5 SIZE + \beta_6 DEBTS + \beta_7 INDU + \epsilon_i$$

With:

- DIS IC: represents the level of disclosure of intellectual capital
- DIS HC: is the level of disclosure of human capital
- DIS RC: is the level of disclosure of relational capital
- DIS SC: is the level of disclosure of structural capital
- K-CONC: represents the ownership concentration level
- K-MANG: represents the level of managerial ownership
- ACUMULATION: represents the accumulated roles of the President of the Board and CEO
- K-INST: represents the participation of institutional investors in the capital
- SIZE: represents the company size
- DEBTS: represents the company's debt level
- INDU: represents the industry
- α : represents the constant of the model
- β : represents the model parameters we want to estimate
- ϵ : represents an unobservable random term.

The results show that the average score of disclosure of intellectual capital is 36.66%. The minimum score of disclosure of information on IC in the Canadian context is on average 22%. This result is quite important. It can be explained by the fact that the Canadian economy shifts towards a knowledge-based orientation and, away from its natural resource roots, the importance and value of intellectual capital increases. So, Canadian firms are currently not required by accounting standards or by law to report on most of their intellectual capital; however, they may voluntarily elect to disclose such information to create value. The results of the descriptive analysis show that relational capital is the most disclosed category (mean = 45.10%). This result is justified by the eminence of institutional investors in Canada who require more information, like those related to relational capital, to assess the company's external environment. Secondly, structural capital has a mean of 43.25%. This result is developed via the disclosure of such information, which may

Table 2. Measurement of independent variables

Variables	Symbols	Measures
The variables related to the ownership structure		
Ownership concentration	K-CONC	The number of shares held by the top three shareholders / The total number of common outstanding shares.
Managerial ownership	K-MANG	The number of shares held by the managers / The total number of common shares outstanding
Combination of the positions of CEO and Chairman of the Board	ACCUMUL	This is a binary variable that takes 1 if there is a function of overlapping; 0 otherwise
Institutional ownership	K-INST	The number of shares held by institutional investors / The total number of shares outstanding
Control variables		
The size of the company	SIZE	The natural logarithm of total assets
The level of debt	DEBTS	Total debt / Total assets
Industries	INDUS	It is a binary variable that takes 1 if it is high technology sector; 0 otherwise

Table 3. Descriptive statistics of the explanatory variables

Panel A: Continued variables

Variables	Minimum	Maximum	Average	Standard Deviation
K-CONC	0,17%	99,87%	28,61%	11,984
K-MANG	0	82,14%	11,08%	18,60
K-INST	0	66,14%	10,07%	14,371

Panel B: Dichotomy's variable

ACCUMUL		
Modality	1	0
Frquency	27	23
Percentage	54%	46%

DISCUSSION AND RESULTS

Descriptive analysis

Based on the data used for the characteristics of the ownership structure, we find that the share ownership of Canadian firms is fairly concentrated (average = 28,61%). Our result is similar to Di Vito and Bozec (2010). Similarly, we note that the equity participation of managers is equal to 11,08% and the ownership of institutional investors is equal to 10,07%. Therefore, one can conclude that the ownership structure of our sample is characterized by a concentration of ownership (mean = 28,61%), with moderate managerial ownership (mean = 11,08%), and an institutional ownership (mean = 10,07%). Table 3 presents some descriptive statistics on the characteristics of our sample concerning the explanatory variables. Table 4 presents some characteristics of the disclosure of intellectual capital (overall index) and of these three components (CH, CS, CR).

harm the competitive position of the company on the market. Finally, we found the human capital average which is equal to 30. This result is explained by the rapid turnover of employees and officers. Our results are confirmed by several other studies like those of Bougacha and Khoufi (2010), Goth and Lim (2004) and Guthrie and Petty (2000) which explain this phenomenon by the globalization and segmentation of the market where priority is given to improving the value of the firm and its relations with its external partners (clients).

Vandemaele *et al.*, (2005) indicate, in a longitudinal and comparative study in the Netherlands, Sweden and the UK, that firms are disclosing more about external structure, compared to the other IC categories. For all countries, and over all years, about 40 percent of the disclosures relate to external structure, about 30 percent relate to internal structure and about 30 percent to human capital.

Table 4. Descriptive statistics of dependent variables

Variables	Minimum	Maximum	Average	Standard Deviation
DiS_HC	2	17	4,95	2,844
DiS_RC	4	19	11,52	2,433
DiS_SC	5	13	5,53	3,113
DiS_IC	11	49	22,00	3,426

The association between variables was tested using Pearson correlation. The null hypothesis of this test provides no relationship between the variables. The results of the bivariate analysis (Pearson correlations) are presented in Table 5. As predicted, the analysis of Pearson correlation results revealed a negative and statistically significant at 1% (-0,545) relationship between the level of disclosure of intellectual capital and the concentration of ownership. The results showed a positive and statistically significant relationship at 5% (0,360) between the level of disclosure of intellectual capital and institutional ownership. As far as managerial ownership is concerned, the results show a negative relationship between this variable and the level of disclosure of intellectual capital.

Table 5. Pearson correlation matrix between the independent variables and the dependent variables

Variables	K CONC	K MANG	K INST	ACCUMUL
Dis_IC	-0,545** (0,000)	-0,270 (0,062)	0,360* (0,012)	-0,144 (0,87)
DiS_HC	-0,420** (0,003)	-0,093 (0,286)	0,165 (0,150)	-0,239* (0,019)
DiS_RC	-0,443** (0,002)	-0,185 (0,132)	0,271* (0,047)	-0,187 (0,131)
DiS_SC	-0,519** (0,000)	-0,325* (0,022)	0,443** (0,001)	-0,088 (0,267)

** Correlation is significant at the 1%

* Correlation is significant at the 5% level

The relationship is statistically significant at 10%. Concerning, the variables representing the components of intellectual capital, the bivariate analysis shows a negative and statistically significant relationship between the concentration of ownership *et al* these variables and a positive and statistically significant relationship between institutional ownership and relational capital disclosure variables (0,271) and disclosure of structural capital (0,443). The results also show a negative and statistically significant relationship between the disclosure of structural capital and managerial ownership (-0,325) and a negative and statistically significant relationship between the disclosure of human capital and duality (-0,239).

Table 6. Pearson correlation matrix between the explanatory variables

Variables	K-CONC	K-MANG	K-INST	ACCUMUL
K-CONC	1	-	-	-
K-MANG	0,23	1	-	-
K-INST	0,043	-0,122	1	-
ACCUMUL	0,3	0,21	0,04	1

** Correlation is significant at the 1%

* Correlation is significant at the 5% level

To test the presence of multicollinearity between the explanatory variables, bivariate analysis (using Pearson correlations) was used. The review of the Pearson correlation matrix presented in Table 6 allows us to study the null hypothesis of no correlation between two variables. As shown in table 6, the matrix of Pearson correlation coefficients between the different explanatory variables shows no greater correlation than 0.8 (by Ho and Wong 2001). There is a

correlation between two variables only if the coefficient is equal to or greater than 0,8. Thus, all correlations are relatively low. This leads us to conclude the absence of multicollinearity.

Multivariate analysis and discussion

Table 7 presents the results of the linear regression related to the effect of ownership structure on voluntary disclosure of information on intellectual capital. It shows that the explanatory power of the main model is of the order of 0.619, meaning that 61.9% of the voluntary disclosure of information on intellectual capital is explained by the ownership structure and other control variables. The results indicate that the explanatory power of the model is very important for global index (M1) of disclosure and for the three components of global index. It is found that 41.9% of the variation of the disclosure of human capital (M2) is explained by the ownership structure and other control variables, 44.3% of the variation of the disclosure of relational capital (M3) is explained by the ownership structure and other control variables and 60.7% of the variation of the disclosure of structural capital (M4) is explained by the ownership structure and other control variables.

Table 7. Effect of ownership structure on voluntary disclosure of information on intellectual capital

Models	R ²	R ² adjusted	F	Meaning
M 1 (dependent variable: Dis_IC)	0,619	0,516	5,965	0,000
M 2 (dependent variable: Dis_HC)	0,419	0,262	2,651	0,027
M 3 (dependent variable: Dis_RC)	0,443	0,292	2,861	0,017
M 4 (dependent variable: Dis_SC)	0,607	0,501	5,661	0,000

The effect of ownership concentration on disclosure of intellectual capital

The results show a negative relationship between the level of disclosure of intellectual capital and ownership concentration (-0,454). This confirms the results of Patton (2004) and Labelle and Schatt (2005) and Makhija which showed that the concentration of ownership in the hands of a small number of shareholders encourages the retention of information in front of interest conflicts. This result confirms the assumptions of agency theory that: the more the capital is diffused, the more disclosure is needed to reduce agency costs. Leaders are encouraged to disclose more information to the outside to signal and increase the value of shares of the firm and to distinguish themselves from less successful companies. Our finding joins those of Hossain *et al.*, (1994), Chau and Gray (2002), Firer and Williams (2005) and Bougacha and Khoufi (2010), which affirm that the more the capital is diffused, the more disclosure is needed to reduce costs agency. However, when capital is concentrated, voluntary publication of information is not important because investors have a privileged access to information. Oliviera *et al.* (2006) proved that the lower the concentration of ownership is, the more voluntary IC disclosure is made. Li *et al.* (2007) also prove that companies based on knowledge with concentrated ownership perform lower IC disclosure. Dunstan *et al.* (2013) suggest a non-linear relationship between ownership concentration and the level of intellectual capital disclosure based on a sample of 155 firms listed on the New Zealand Exchange. Wijana *et al.*, (2013) showed that the concentration

of ownership has no consistent proven effect on IC disclosure in Indonesia.

Table 8. Effect of ownership concentration on disclosure of intellectual capital

Dependent variables	K-CONC			
	Expectedsign	Coefficient	T	Meaning
Dis IC	Negative	-0,454	-3,791	0,001
Dis HC	Negative	-0,280	-2,052	0,048
Dis RC	Negative	-0,337	-2,473	0,021
Dis SC	Negative	-0,437	-3,513	0,003

The effect of managerial ownership on disclosure of intellectual capital

The results show a non-significant relation between managerial ownership and the level of the intellectual capital disclosure (0,023). There is, also, a non-significant relationship between human capital, relational capital and structural capital information and managerial ownership. The lack of a significant relationship in the Canadian context can be the result of the low participation of managers in the capital of the firms' sample. However, the results of this study do not confirm the agency theory postulate which states that increased managerial ownership position can align managers with shareholders and motivate managers to be responsible for increasing shareholder wealth by raising the firm's performance (Haruman, 2008). In this sense, Matoussi *et al.*, (2009) found that the proportion of capital held by the manager negatively affects the level of disclosure of information on intellectual capital. The same result was confirmed by Li Jing *et al.* (2008) in the English context of the United Kingdom. Managerial ownership before the IPO may influence companies' disclosure practices and thus the extent of disclosure in the IPO prospectus (Bukh *et al.*, 2005).

Table 9. Effect of managerial ownership on disclosure of intellectual capital

Dependent variables	K-MANG			
	Expectedsign	Coefficient	T	Meaning
Dis IC	Positive	0,023	0,170	0,889
Dis HC	Positive	0,071	0,459	0,658
Dis RC	Positive	0,062	0,397	0,694
Dis SC	Positive	-0,061	-0,397	0,665

The effect of CEO duality on disclosure of intellectual capital

Concerning the link between the duality of functions and the extent of voluntary disclosure of intellectual capital, we note that the accumulation of functions in the hands of a CEO does not significantly affect the voluntary disclosure of intellectual capital in Canada (Table 10). This result is consistent with those of Ho and Wong (2001), Cheng and Courtenay (2006), Li *et al.* (2008) and Bougacha and Koufi (2010). Gul and Leung (2004) found that CEO duality resulted in lower voluntary disclosure, as in these circumstances, boards were less effective at monitoring management and ensuring high levels of transparency. Similarly, Cerbioni and Parbonetti (2007) and Muttakin *et al.* (2015) reported that concentration of power through CEO duality is negatively associated with IC disclosures, whereas Li *et al.* (2008) and Hidalgo *et al.*, (2011) found no such a relationship.

Table 10. Effect of managerial ownership on disclosure of intellectual capital

Dependent variables	K-MANG			
	Expectedsign	Coefficient	T	Meaning
Dis IC	Positive	0,023	0,170	0,889
Dis HC	Positive	0,071	0,459	0,658
Dis RC	Positive	0,062	0,397	0,694
Dis SC	Positive	-0,061	-0,397	0,665

The effect of institutional ownership on disclosure of intellectual capital

The results in Table 11 show a positive relationship between institutional ownership and the level of disclosure of intellectual capital (0,358). The results confirm several empirical studies such as Lakhali (2006) and Bougacha and Khoufi (2010) which highlight the importance of the requirements of institutional investors for disclosure of information. This result can be explained by the fact that institutional investors are full participants in the Canadian corporate governance structures; they are highly demanding in terms of information. Institutional investors are viewed as an important governance mechanism. They are very rigorous about the quality and timing of the information they demand.

Table 11. Effect of institutional ownership on disclosure of intellectual capital

Dependent Variables	K INST			
	Expectedsign	Coefficient	T	Meaning
Dis IC	Positive	0,358	2,745	0,016
Dis HC	Positive	0,115	0,778	0,469
Dis RC	Positive	0,388	1,894	0,067
Dis SC	Positive	0,448	3,894	0,002

The effect of control variables on disclosure of intellectual capital

The results show a positive, but not statistically-proven, relationship between the level of voluntary disclosure of intellectual capital and the size of the firm. Many previous studies confirm these results, such as those of Bhatia and Agarwal (2015) in the Indian context. Canadian companies appear to disclose information about the intellectual capital whatever their size in order to convey a positive signal to the capital market. They will obtain greater benefits by doing more disclosure, which may reduce uncertainty and draw more attention from stakeholders. Conversely, other studies found opposite results (Purnomosidhi 2005; Oliveira *et al.*, 2006; Li *et al.*, 2007; Cerbioni and Parbonetti 2007; Wijana *et al.*, 2013; Muttakin *et al.*, 2015). Regarding debt, it has a non-significant and negative effect on voluntary disclosure of intellectual capital. This relative result is consistent with the results of Cerbioni and Parbonetti (2007) and Muttakin *et al.*, (2015). On the other hand, Camfferman and Cooke (2002), Purnomosidhi (2005) and White *et al.*, (2007) found a positive effect of the level of debt to IC disclosure. Our result can be explained by the fact that creditors do not require voluntary information about the intellectual capital because they are always informed about the company's performance and its ability to generate cash flow because of their ability to produce private information. Finally, results do not confirm the agency theory that supposes that High debt levels require high monitoring costs so that more disclosure is needed to reduce them.

Table 12. Relationship between control variables and disclosure of intellectual capital

Variables	Size			Debt			Industry		
	Coef	T	Mean	Coef	T	Mean	Coef	T	Mean
DIS-IC	0,176	1,400	0,173	-0,207	-1,679	0,109	0,164	1,181	0,252
DIS-HC	0,327	2,237	0,039	-0,145	-0,973	0,364	0,016	0,110	0,916
DIS-RC	0,051	0,398	0,782	-0,215	-1,282	0,176	0,342	2,145	0,050
DIS-SC	0,068	0,529	0,594	0,115	1,273	0,176	0,092	0,682	0,500

Regarding the relationship between the industry and the voluntary disclosure of intellectual capital, the results showed a positive but not statistically-significant relationship (0,164) between the level of voluntary disclosure of intellectual capital (global index) and industry. We found a positive relationship, significant at 5% (0,342) between the level of voluntary disclosure of rational capital (M3) and industry. This result is justified by the importance of institutional investors in Canada who require more information, like those related to relational capital, to assess the company's external environment. Our results seem to be different from others who argued that there is an association between the industry classification and disclosure of IC information (Cordazzo and Vergauwen 2012; Bhatia and Agarwal, 2015).

Conclusion

The purpose of this paper is to study the impact of ownership structure on voluntary disclosure of information on the IC in annual reports for a sample of Canadian companies listed on the Toronto Stock Exchange. To investigate the relationship between disclosure of intellectual capital and ownership structure, four models combining the level of intellectual capital disclosure to characteristics of ownership structure have been proposed. The studied ownership structure features are ownership concentration, managerial ownership, institutional ownership and duality. To measure the level of disclosure of intellectual capital, a disclosure index of 61 pieces of information was established. Then, annual reports and direction circulars of 50 companies in 2012 were examined to measure disclosure. The results show that the Canadian firms are highly concentrated, with an important presence of institutional structures of ownership. The results also show that the average score of disclosure of intellectual capital is 36.66%, which is a relatively important score. The most frequently disclosed information about intellectual capital is the relational capital (45.10%).

This proves that investors in Canada require more information about intellectual capital because they have an increasingly important influence on long-term corporate value. Besides, in the Canadian context, business begins to be aware of the ability to compete not only in the ownership of tangible assets, but it emphasizes the importance of knowledge. The results of multiple regressions showed a negative and statistically significant relationship between the level of disclosure of intellectual capital and the ownership concentration in Canada (-0.454). The same results have been found by Oliviera *et al.* (2006), Li *et al.* (2008), in the United Kingdom, and Bougacha and Khoufi (2010), in France. Our finding confirms the relationship proposed by the agency theory that: the More the capital is diffused, the further disclosure is needed to reduce agency costs. However, when capital is concentrated in the hands of major shareholders, they will be more reluctant to disclose voluntary information outside.

Moreover, concentrated enterprises have fewer initiatives to respond to requests for information from investors. There is less pressure on the disclosure of information on intellectual capital in annual reports. The results also suggest a positive and statistically significant relationship between the level of disclosure of intellectual capital and institutional ownership (0,358). These results support the crucial role played by institutional investors in the Canadian context in the voluntary disclosure of intellectual capital. In the Canadian market, these investors constitute a guarantee of protection of the interests of minority shareholders when shareholding is focused. Bushee and Noe (2000) have found the same results as well as Nagar *et al.* (2003) in the American context. Regarding managerial ownership, the regression results show no significant relationship between the level of disclosure of intellectual capital and managerial ownership (0,023). These results can be explained by the low participation of leaders in the capital of Canadian firms in our sample. Matoussi *et al.* (2009) found that managerial ownership negatively affects the level of disclosure of information on intellectual capital in the Tunisian context. The same result was confirmed by Li *et al.* (2008) in the English context of the United Kingdom, and by Chau and Gray (2000) and Gelb (2000) on a sample of US companies. Actually, managers who have a significant share in the capital cannot be controlled and they can manage the company with a perspective opposing the maximization of its value. In this case, they will not be encouraged to voluntarily disclose information.

Concerning the link between the duality of functions and the extent of voluntary disclosure of intellectual capital, we note that this variable has no effect on voluntary disclosure. This result is consistent with Li *et al.* (2008) for the United Kingdom, Li *et al.* (2008) and Hidalgo *et al.* (2011) who found no such a relationship. Muttakin *et al.* (2015) reported that concentration of power through CEO duality has little impact on IC disclosures. Size, debt and Industry difference may have inconsistent effects on IC disclosure for Canadian firms. The result is inconclusive. The overall findings of the study suggest that ownership structure is determinant of the extent of IC information in Canada. Intellectual capital disclosure could provide a more intensive monitoring package for a firm to reduce opportunistic behavior and information asymmetry. In summary, the results show that in a context characterized by the concentration of ownership and an important weight of institutional investors, disclosure of information on intellectual capital remains important. Like other developing countries, we can notice the importance of information on intellectual capital as a signal of the company's ability to create wealth and value, and realize, therefore, a competitive advantage. This study has some limitations. First, the number of firms in the sample is reduced. Next, the method for calculating the score for disclosure of information on intellectual capital is limited because it uses a manual quantitative and not a qualitative method. The manually measure of disclosure of intellectual

capital disclosure is supposed to be the most reliable but does not allow a better generalization of the results. As current studies examine only annual reports, future studies can review other documents such as press releases, analysts' reports and other reports like quarterly reports to further enrich the findings. Finally, this finding has important implications for corporate regulators and can assist information users in the interpretation of voluntary intellectual capital disclosure. Capital market authorities must consider that the ownership structure could have an effect on the extent on IC disclosure. So they can give major recommendations for corporations that are concerned about their relationship with the capital markets to be aware of the optimal ownership structure that can provide external stakeholders with their requirements of information about intellectual capital.

REFERENCES

Journal articles

- Barako, D. G., Hancock, P. and Izan, H. Y. 2006. Factors influencing voluntary corporate disclosure by Kenyan companies. *Corporate Governance: An International Review* 14 (2): 107-125.
- Bemby, B. S., Hakiki, A. and Ferdianti, R. 2015). Intellectual Capital, Firm Value and Ownership Structure as Moderating Variable: Empirical Study on Banking Listed in Indonesia Stock Exchange period 2009-2012. *Asian Social Science* 11(16) : 148.
- Bhatia, M. and Agarwal, B. 2015. Intellectual Capital Disclosures in IPO Prospectuses of Indian Companies. *International Journal of Social Sciences and Management* 2(1): 40-51.
- Bontis, N, 2003. Intellectual Capital Disclosure in Canadian Corporations. *Journal of Human Resource Costing & Accounting* 7 (1) :9 – 20.
- Boubaker S. and Labegorre F. 2006. L'environnement informationnel et la structure de propriété et de contrôle des Sociétés cotées Françaises *Finance Contrôle Stratégie* 9 (3) : 5-38.
- Boujenoui, A. and Zeghal, D. 2006. Effet de la structure des droits de vote sur la qualité des mécanismes internes de gouvernance : cas des entreprises canadiennes. *Revue canadienne des sciences de l'administration* 23 (3) : 183-201.
- Bozzolan, S, F. Favotto and F Ricceri, 2003. Italian annual intellectual capital disclosure: an empirical analysis. *Journal of Intellectual Capital* 4 (4): 543-558.
- Bukh, P., Nielsen, C., Gormsen, P. and Mouritsen, J. 2005. Disclosure of information on intellectual capital in Danish IPO prospectuses. *Accounting, Auditing & Accountability Journal* 18 (6): 713–732.
- Bushee, B., and C. Noe 2000. Corporate Disclosure Practices, Institutional Investors, and Stock Return Volatility. *Journal of Accounting Research* 38 : 171-202.
- Camfferman, K. and Cooke, T.E. 2002. An Analysis of Disclosure in The Annual Reports of UK and Dutch Companies. *Journal of International Accounting* 1: 1-28
- Cerbioni, F. and Parbonetti, A. 2007. Exploring the Effects of Corporate Governance on Intellectual Capital Disclosure: An Analysis of European Biotechnology Companies. *European Accounting Review* 16(4): 791-843.
- Chaminade, C. and Roberts, H. 2003. What it means is what it does: a comparative analysis of implementing intellectual capital in Norway and Spain. *European Accounting Review* 12(4) :733-751.
- Chau, G.K. and Gray, S.J. 2002 Ownership structure and corporate voluntary disclosure in Hong Kong and Singapore. *The International Journal of Accounting* 37: 247-265.
- Cheng, E. and Courtenay, S.M. 2006. Board composition, regulatory regime and voluntary disclosure. *International Journal of Accounting* 41 (3): 262-289
- Claessens S., Djankov S., Fan J. and Lang L. 2002. Disentangling the Incentive and Entrenchment Effects of Large Shareholdings. *The Journal of Finance* 57 (6): 2741-2771.
- Cohen, S. and Kaimenakis, N. 2007. Intellectual capital and corporate performance in knowledge-intensive SMEs. *The Learning Organization* 14(3): 241-262.
- Cooke, T. E. 1992. The impact of size, stock market listing and industry type on disclosure in the annual reports of Japanese listed corporations. *Accounting and Business Research* 22 (87): 229-237.
- Cordazzo, M. and Vergauwen, G.M.C. 2012. Intellectual capital disclosure in the UK biotechnology IPO prospectuses. *Journal of Human Resource Costing & Accounting* 16 (1): 4-19.
- Di Vito, J., Laurin, C. and Bozec, Y. 2010. R&D activity in Canada: does corporate ownership structure matter? *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration* 27 (2) : 107-121.
- Dong, J., and Gou, Y. N. 2010. Corporate governance structure, managerial discretion, and the R&D investment in China. *International Review of Economics & Finance* 19 (2): 180-188.
- Eng, L.L. and Mak, Y.T. 2003. Corporate governance and voluntary disclosure. *Journal of Accounting and Public Policy* 22: 325-345.
- Firer, S and Williams. S.M 2003. Intellectual capital and traditional measures of corporate performance. *Journal of Intellectual Capital* 4 (3): 348-360.
- Firer, S and S.M. Williams, 2005. Firm ownership structure and intellectual capital disclosures. *SA Journal of Accounting Research* 19 (1): 1-18.
- Gadhoom, Y. 2006. Power of Ultimate Controlling Owners: A Survey of Canadian Landscape. *Journal of Management and Governance* 10: 179-204.
- Gelb, D, 2000. Managerial ownership and accounting disclosure: an empirical study. *Review of Quantitative Finance and Accounting* 15(2): 169-185.
- Gul, F.A. and Leung, S. 2004. Board leadership, outside directors' expertise and voluntary corporate disclosures. *Journal of Accounting and Public Policy* 23: 351-379.
- Guthrie, J., Ricceri F. and Dumay, J. 2012. Reflections and projections: A decade of Intellectual Capital Accounting. *Research The British Accounting Review* 44: 68-82.
- Hidalgo, R., García-Meca, E. and Martínez, I. 2011. Corporate governance and intellectual capital disclosure. *Journal of Business Ethics* 100 (3): 483-495.
- Ho, S.S.M. and Wong, K.S. 2001. A study of the relationship between corporate governance structures and the extent of voluntary disclosure. *Journal of International Accounting, Auditing & Taxation* 10: 139-156.
- Hossain, M, Tan, L.M. and M.B. Adams, 1994. Voluntary disclosure in an emerging capital market: Some empirical evidence from companies listed on the Kuala Lumpur stock

- exchange. *International Journal of Accounting* 29 (4): 334-351.
- Iaad I. S. Mustafa Sartawi ,Riyad M. Hindawi, Ruba Bsoul and Ala'eddin Jamil Ali 2014. Firm Characteristics, and Voluntary Disclosure: The Case of Jordanian Firms Listed on the Amman Stock Exchange.*International Business Research* 7: 67-82
- Jensen, M.C. and Meckling, W. H. 1976. Theory of the firm: Managerial Behavior, Agency costs and Ownership Structure.*Journal of Financial Economics* 3 (4) : 305-360.
- Kang, H.H. and Gray, S. 2011. Reporting intangible assets: Voluntary disclosure practices of top emerging market companies.*The International Journal of Accounting* 46: 402- 423.
- Keenan, J. and Aggestam, M. 2001. Corporate governance and intellectual capital: some conceptualisations. *Corporate Governance: An International Review* 9 (4) : 259-75.
- Khoufi, W. and Bougacha, F. 2010. Gouvernement d'entreprise et divulgation volontaire du capital immatériel : cas du contexte français. *La revue comptable et financière* 5 : 67-93.
- Labelle R. and Schatt A. 2005. Structure de propriété et communication financière des entreprises françaises. *Finance Contrôle Stratégie* 8 (3).
- Lakhal F. 2006. Les mécanismes de gouvernement de l'entreprise et la publication volontaire des résultats en France. *Comptabilité- Contrôle- Audit*12 (2) : 69-92.
- Li, J., Pike, R. and Haniffa, R. 2008. Intellectual capital disclosure and corporate governance structure in UK firms. *Accounting and Business Research* 38 (2) : 137-159.
- Lopes, P. and Rodrigues, L. 2007. Accounting for financial instruments: An analysis of the determinants of disclosure in the Portuguese stock exchange. *The International Journal of Accounting* 42 : 25-56.
- Makhija, A. and Patton, J. 2004. Impact of firm ownership structure on voluntary disclosure empirical evidence from Czech annual reports. *Journal of Business* 77 (3): 457.
- Muttakin, M. B., Khan, A., and Belal, A. R. 2015. Intellectual capital disclosures and corporate governance: An empirical examination. *Advances in Accounting*31(2) :219-227.
- Nagar V., Nanda D. and Wysocki P. 2003. Discretionary Disclosure and stock-based of Finance 46(4) :1325-1359.
- Oliveira, L., Rodrigues, L.L. and Craig, R. 2010. Intangible assets and value relevance: Evidence from the Portuguese stock exchange. *British Accounting Review* 42 (4) : 241-252.
- Oliveira, S. and Kandadi, K.R. 2006 How to develop knowledge culture in organizations? A multiple case study of large distributed organizations. *Journal of Knowledge Management*10 (4): 6-24.
- Petty, R. and Guthrie, J. 2000. Intellectual capital literature review: measurement, reporting and management. *Journal of intellectual capital*1 (2) :155-176.
- Petty, R. and S. Cuganesan, 2005. Voluntary Disclosure of Intellectual Capital by Hong Kong Companies: Examining Size, Industry and Growth Effects over Time. *Australian Accounting Review* 15 (2): 40-50.
- Purwanto, A. 2011. Pengaruh Struktur Kepemilikan Perusahaan terhadap Intellectual Capital Performance.*Jurnal Prestasi* 8 (2): 11-33.
- Raffournier, B. 1995. The determinants of voluntary financial disclosure by Swiss listed companies. *European accounting review* 4 (2) : 261-280.
- Randa, F. D. A. S. 2012. Pengaruh Modal Intelektual terhadap Nilai Perusahaan. *Jurnal Sistem Informasi Manajemen dan Akuntansi*10(1) :24-27.
- Rodrigues, L. L., Tejedo-Romero, F. and Craig, R. 2016 Corporate governance and intellectual capital reporting in a period of financial crisis: Evidence from Portugal. *International Journal of Disclosure and Governance*.
- Roos, G. and Roos, J. 1997. Measuring your company's intellectual performance. *Long range planning* 30(3): 413-426.
- Satta, G., Parola, F., Profumo, G., and Penco, L. 2015. Corporate governance and the quality of voluntary disclosure: Evidence from medium-sized listed firms. *International Journal of Disclosure and Governance*12 (2): 144-166.
- Spence.M (1973). "Job Market Signaling". *Quarterly Journal of Economics*. 87 (3): 355–374
- Vafaei, A., Taylor, D. and Ahmed, K. 2011. The value relevance of intellectual capital disclosures. *Journal of Intellectual Capital*12 (3) : 407-429.
- Vandemaele, S.N, P.G.M.C. and Vergauwen A.J. Smits, 2005. Intellectual capital disclosure in The Netherlands, Sweden and the UK A longitudinal and comparative study. *Journal of Intellectual Capital* 6 (3): 417-426.
- Vergauwen, P. G. and Van Alem, F. J. 2005. Annual report IC disclosures in the Netherlands, France and Germany. *Journal of Intellectual Capital*6(1) :89-104.
- White, G., Lee, A. and Tower G. 2007. Driver of Voluntary Intellectual Capital Disclosure in Listed Biotechnology Companies. *Journal of Intellectual Capital* 8 (3) : 517- 537.
- Wijana, A.P.N., Sutrisno, M.A. and Wirakusuma, 2013. The Voluntary Disclosure of Intellectual Capital: A Longitudinal Study from Public Firms in Indonesia. *Res. J. Fin. Account* 4 (12).
- Williams.S.M, 2001. Is intellectual capital performance and disclosure practices related?*Journal of intellectual Capital* 2 (3): 192-203.
- Wu, S., Micklely, L. J., Leibensperger, E. M., Jacob, D. J., Rind, D., & Streets, D. G. 2008. Effects of 2000–2050 global change on ozone air quality in the United States. *Journal of Geophysical Research: Atmospheres* 113(D6).
- Zeghal, D. and Maaloul A. 2010. Analyzing value added as an indicator of intellectual capital and its consequences on company performance. *Journal of Intellectual Capital* 11(1) : 39-60.
- Zhou.Ch and Jing Li , 2008. Product innovations in emerging market-based international joint ventures: An organizational ecology perspective. *Journal of International Business Studies* 39 (7) : 1114-1132.

Book

- Edvinsson, L. and Malone, M. S. 1997. Intellectual Capital: Realizing Your Company's True Value by Finding Its Hidden Brainpower.
- Pfeffer, J. and Salancik, G. R. 1978. The External Control of Organizations: A Resource Dependence Perspective, Harper & Row, New York.

Chapter in book

- Bergamini, I and Zambon, S. 2002. Scoring company disclosure on intangibles: An application of the Ferrara

methodology in an European perspective”, *Visualising Intangibles: Measuring and Reporting in the Knowledge Economy*, University of Ferrera, Italy, pp. 129-161.

Conference papers

Chiraz, B. A., Trabelsi, S. and Summa, M. G. 2007. Disclosure quality and ownership structure: Evidence from the French stock market. In *Workshop on Accounting in Europe conference, September* pp. 12-13.

Papers/talks presented at a conference but not published

Woodcock, J. and Whiting, R. H. 2009. Intellectual Capital Disclosures by Australian Companies. Paper accepted for presentation at the AFAANZ Conference, Adelaide, Australia, July 2009. New Zealand.

Matoussi, F. and Simonnaux, L. 2009. Didactique et technologies de l’information et de la communication. Communication présentée au Revue ISDM 39, TICE Méditerranée Milan, Repéré à <http://isdms.univ-tln.fr>.

Research papers/reports/working papers

Cañibano, L., Sánchez, M. P., García-Ayuso, M., and Chaminade, C. 2002. Guidelines for managing and reporting on Intangibles (Intellectual Capital Report). *Vodafone Foundation*

Haruman, T. 2008. Pengaruh Struktur Kepemilikan terhadap Keputusan Keuangan dan Nilai perusahaan Survey Pada Perusahaan Manufaktur di PT. Bursa Efek Indonesia.

Li, J., Pike, R. H. and Haniffa, R. 2007. Intellectual capital disclosure in knowledge rich firms: the impact of market and corporate governance factor, Bradford University School of Management.

Purnomosidhi, Bambang. 2005 Analisis Empiristhadap Determinan Praktik Pengungkapan Modal Intellektual pada Perusahaan Publik di BEJ. Disertasi. UB, Malang

Dissertation/thesis

Solikhah, B. 2010. Pengaruh Intellectual Capital terhadap Kinerja Keuangan, Pertumbuhan dan Nilai Pasar pada Perusahaan yang tercatat di Bursa Efek Indonesia. Diponegoro University.

Article online

Keitha Dunstan, Thu Phuong Truong, Tony Van Zijl, & Meiyi Zhang, 2013. Board structure, ownership concentration and voluntary disclosure of intellectual capital in New Zealand. https://www.researchgate.net/.../256060358_Board

OCDE. 2008. Intellectual assets and value creation: synthesis report. Organization for Economic Cooperation and Development available at: www.oecd.org/dataoecd/36/35/40637101.pdf

OECD, 1999. Measuring and Reporting Intellectual Capital: Experience, Issues and Prospects. Amsterdam, June (<http://www.oecd.org/dsti/sti/industry/indcomp/act/amsconf/symposium.htm>).

APPENDIX 1: The disclosure index (Li and al., 2008)

<i>Human capital</i>	<i>Structural capital</i>	<i>Relational capital</i>
Number of employees	Intellectual property	Customers
Employee age	Process	Market presence
Employee diversity	Management philosophy	Customer relationships
Employee equality	Corporate culture	Customer acquisition
Employee relationship	Organisation flexibility	Customer retention
Employee education	Organisation structure	CTE
Skills/know-how	Organisation learning	Customer involvement
Employee work-related competences	Research & Development	Company image/ reputation
Employee work-related knowledge	Innovation	Company awards
Employee attitudes/behaviour	Technology	Public relation
Employee commitments	Financial dealings	Diffusion & networking
Employee motivation	Customer support function	Brands
Employee productivity	Knowledge-based infrastructure	Distribution channels
Employee training	Quality management & improvement	Relationship with suppliers
Vocational qualifications	Accreditations (certificate)	Business collaboration
Employee development	Overall infrastructure/ capability	Business agreements
Employee flexibility	Networking	Favourite contract
Entrepreneurial spirit	Distribution network	Research collaboration
Employee capabilities		Marketing
Employee teamwork		Relationship with stakeholders
Employee involvement with community		Market leadership
Other employee features		
